

Radiologic Technology and Medical Imaging

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PROGRAM:

Radiologic Technology and Medical Imaging/AAS

FACULTY:

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Sr CLT: Hoyte

Associate in Applied Science in RADIOLOGIC TECHNOLOGY AND MEDICAL IMAGING

The Radiologic Technology and Medical Imaging program in diagnostic radiography is accredited by the Joint Review Committee on Education in Radiologic Technology (JRCERT) and the American Registry of Radiologic Technologists (ARRT).

The graduate of the program is eligible to take the American Registry of Radiologic Technologists (ARRT) examination for certification and New York State Licensure. Among the employers of the graduates of this program are Brookdale University Hospital & Medical Center, Brooklyn Hospital, Hospital for Special Surgery, Maimonides Medical Center, New York Presbyterian Hospital: New York Weill Cornell Center, New York Presbyterian Hospital: Columbia Presbyterian Center, St. Lukes-Roosevelt Hospital Center (St. Lukes Division), and St. Lukes-Roosevelt Hospital Center (Roosevelt Division).

Radiologic Technology and Medical Imaging

The radiologic technologist utilizes ionizing radiation to produce radiographic images of various parts of the body to aid in the detection of injury or disease. In recent years the increasing complexity of radiologic procedures and the continuing emphasis upon the elevation of prescribed standards of practice set forth by the Bureau of Environmental Radiation Protection of New York State have made radiologic technology and medical imaging a highly specialized and sophisticated science requiring competently trained personnel.

City Tech's comprehensive program provides students with the special knowledge and skills required for the practice of radiologic technology and medical imaging.

Approximate Additional Costs

Students in the radiologic technology and medical imaging program will be required to purchase textbooks and incur the

following expenses: film badge monitoring service: \$20 per year paid at the beginning of the first and third semesters; special film for open laboratory: \$10 paid at the beginning of the first three semesters; professional liability coverage for the minimum limits of \$1,000,000 each for professional and personal liability: \$15 per year paid at the beginning of the second and fourth semesters; and materials fee: \$30 paid at the beginning of the first, second, third and fourth semesters. Estimated textbook fees \$1,000 over a two-year period. Lab coat: \$20; uniforms and shoes for the clinical education courses: \$75 or more at the beginning of the second semester. (Uniforms and lab coats must have the department emblem on the left sleeve.)

Students in the program are also required to present documented evidence of a complete physical examination demonstrating good health. The examination form will be provided by the radiologic technology and medical imaging department. The program complies with New York State immunization requirements and Hepatitis B vaccine is recommended. Additionally, students must submit documented evidence of a negative tuberculin skin test (PPD) annually.

Criteria for Admission into the Radiologic Technology and Medical Imaging Curriculum

- A high school diploma or its equivalent (GED)
- CUNY certification in reading, writing and mathematics
- A grade of 75% in a high school science course that includes laboratory experience (biology, chemistry and/or physics). Students lacking the high school course requirement will be required to take BIO 1101/BY 101. This course must be taken before BIO 2311/BY 301.1 and completed with a minimum grade of "C"
- Any student entering the Radiologic Technology and Medical Imaging program who has a felony record should notify the department and the appropriate certifying agencies for clarification of his or her eligibility for licensing/certification.

Progression to Clinical Courses

To be considered for admission into the clinical phase of the program, a student must demonstrate CUNY certification in reading, writing and mathematics; eligibility for MAT 1275/MA 275, BIO 2311/BY 301.1 (Anatomy and Physiology I); successful completion of ENG 1101/EG 101; and a minimum grade point average of 2.5.

If the number of students meeting the stated criteria exceeds the available spaces, seats will be allocated on the basis of the student's academic record and GPA. An index of 2.5 does not guarantee admission into the clinical phase of the program. As the GPAs of the potential applicants increase, a higher GPA will be needed to qualify.

The clinical phase of the program starts only in the fall of each year. The class for the clinical phase is selected during the previous spring semester; therefore, a student must be registered at NYCCT and all eligibility requirements must be completed by the end of the fall semester. Students will be required to complete the two-year clinical phase of the program within four years.

Progression in the Program

An important standard required for progression in and graduation from the Radiologic Technology and Medical Imaging program is a minimum grade of "C" in each course designated with the prefix RAD/RT. Any student earning a grade lower than "C" in a RAD/RT course may not progress in the program without repeating the course and earning a minimum grade of "B". No course in the program may be repeated more than once. Please note that the number of seats in any course designated RAD/RT is strictly limited. If the number of students seeking to enroll in a course designated RAD/RT exceeds the number of seats, first priority for available seats will be given to eligible students who have not previously enrolled in that course. After all such students have had a reasonable opportunity to enroll, students seeking to repeat the course may be given access to the remaining seats, if any. All students seeking to repeat a given course will be ranked by their numeric final grades in that course, and none will be permitted to enroll until those higher on the list have been given an opportunity. Students who received a grade lower than "C" in two or more RAD/RT courses will be dismissed from the program, as will students whose cumulative averages are below 2.0. Anatomy and Physiology (BIO 2311/BY 301.1 and BIO 2312/BY 301.2) must be taken prior to the second year.

Clinical Internship

Students must successfully complete all clinical objectives and course requirements to receive a passing grade. A student can be removed from the internship for any unprofessional behavior, a serious infraction of hospital rules and regulations, or endangering the patient's safety. This would be determined by the hospital and/or faculty and could result in a failing grade.

Any absence beyond the department policy could result in a failing grade in the class.

Transfer into the Radiologic Technology and Medical Imaging Program

Students who wish to transfer into Radiologic Technology and Medical Imaging program from another college and/or from other college curricula must adhere to all the general admission requirements of the College and department. To be eligible for admission to the clinical phase of the program, transfer students from other colleges must be in good academic standing, not on probation, and not academically dismissed from continuing in the radiologic technology program at previous college(s). Transfer students from other colleges must be registered at New York City College of Technology at least one semester prior to being considered for admission to the clinical phase of the program. Transfer students may not be considered for the clinical phase of the program until they have satisfied all the pre-clinical criteria, including a minimum college index of 2.5 and space availability.

Readmission to Radiologic Technology and Medical Imaging

Students who have not registered for Radiologic Technology and Medical Imaging program for two consecutive semesters will be admitted on a space available basis with a minimum GPA of 2.5.

REQUIRED COURSES IN THE MAJOR

		Credits
RAD 1124/RT 124	Introduction to Radiologic Technology and Medical Imaging	1
RAD 1125/RT 125	Radiographic Procedures I	2
RAD 1126/RT 126	Image Production and Evaluation I	2
RAD 1127/RT 127	Patient Care and Management	2
RAD 1128/RT 128	Radiation Protection and Applied Radiobiology	2
RAD 1225/RT 225	Radiographic Procedures II	2
RAD 1226/RT 226	Image Production and Evaluation II	2
RAD 1227/RT 227	Radiographic Pathology	3
RAD 1228/RT 228	Clinical Education I	2
RAD 1229/RT 229	Clinical Education II	3
RAD 2325/RT 325	Radiographic Procedures III	2
RAD 2326/RT 326	Radiographic Physics	2
RAD 2327/RT 327	Cross-Sectional Anatomy	2
RAD 2328/RT 328	Clinical Education III	3
RAD 2425/RT 425	Advanced Radiographic Procedures	2
RAD 2426/RT 426	Imaging Modalities	2
RAD 2427/RT 427	Seminar: Film Critique	2
RAD 2428/RT 428	Clinical Education IV	3
RAD 2429/RT 429	Clinical Education V	2
Subtotal		41

OTHER REQUIRED COURSES

ENG 1101/EG 101	English Composition I	3
MAT 1275/MA 275	Introduction to Math Analysis	4
BIO 2311/BY 301.1	Human Anatomy and Physiology I	4
BIO 2312/BY 301.2	Human Anatomy and Physiology II	4
PHIL 1203/PH 103.1	Health Care Ethics	3
PSY 1101/PS 101	Introduction to Psychology	3
SPE 1330/TS 330	Effective Speaking	3
Subtotal		24

TOTAL CREDITS REQUIRED FOR THE COLLEGE 65

¹ Students without the requisite math background for MAT 1275/MA 275 will be required to take MAT 1175/MA 175 in preparation. This will increase the number of credits required for the degree by four (4).

² Students without requisite science background for BIO 2311/BY 301.1 will be required to take BIO 1101/BY 101 in preparation. This will increase the number of credits required for the degree by four (4).

Computer literacy is required for graduation.

COURSES:

RAD 1124/RT 124 Introduction to Radiologic Technology and Medical Imaging

1 cl hr, 1 cr (fall and spring)
Introduction to the various imaging procedures performed by radiologic technologists. This course may be taken by students who are not eligible for other RAD/RT courses.
Prerequisites: CUNY certification in reading, department approval required

RAD 1125/RT 125 Radiographic Procedures I

1.5 cl hrs, 1.5 lab hrs, 2 cr (fall only)
Materials fee \$30
This course introduces the student to basic radiographic positioning and related anatomy with emphasis on the skeletal system and extremities. In the laboratory, students develop positioning skills needed for clinical practices.

Prerequisite: CUNY certification in reading, writing and mathematics; *corequisites:* RAD 1124/RT 124, RAD 1126/RT 126, RAD 1127/RT 127, RAD 1128/RT 128, BIO 2311/BY 301.1

RAD 1126/RT 126 Image Production and Evaluation I

1.5 cl hrs, 1.5 lab hrs, 2 cr (fall only)
This course introduces the student to accessory radiographic equipment, darkroom procedure, radiographic mathematics and principles of exposure techniques. In laboratory students develop technical skills needed for image production.

Prerequisite: CUNY certification in reading, writing and mathematics; *corequisites:* RAD 1124/RT 124, RAD 1125/RT 125, RAD 1127/RT 127, RAD 1128/RT 128, BIO 2311/BY 301.1, MAT 1275/IMA 275

RAD 1127/RT 127 Patient Care and Management

1.5 cl hrs, 1.5 lab hrs, 2 cr (fall only)
In this course the students learn general patient care and safety; first aid in emergencies; infection control and aseptic techniques; fundamentals of ethics and the law and basic medical terminology. *Prerequisite:* CUNY certification in reading, writing and mathematics; *corequisites:* RAD 1124/RT 124, RAD 1125/RT 125, RAD 1126/RT 126, RAD 1128/RT 128, BIO 2311/BY 301.1

RAD 1128/RT 128 Radiation Protection and Applied Radiobiology

2 cl hrs, 2 cr (fall only)
A study of general methods of radiation protection when exposing patients to ionizing radiation, critical to patient safety and the safety of the radiographer. Biological effects and the basic mechanism of short term and long term effects of ionizing radiation are covered.

Prerequisite: CUNY certification in reading, writing and mathematics; *corequisites:* RAD 1124/RT 124, RAD 1125/RT 125, RAD 1126/RT 126, RAD 1127/RT 127, BIO 2311/BY 301.1

RAD 1225/RT 225 Radiographic Procedures II

1.5 cl hrs, 1.5 lab hrs, 2 cr (spring only) Materials fee \$30
In this course the students continue to learn radiographic positioning and related anatomy with emphasis on basic positioning for skull, thorax and spine; includes practice positioning in lab.

Prerequisites: RAD 1224/RT 124, RAD 1125/RT 125, RAD 1126/RT 126, RAD 1127/RT 127, RAD 1128/RT 128, BIO 2311/BY 301.1; *corequisites:* RAD 1226/RT 226, RAD 1227/RT 227, RAD 1228/RT 228, BIO 2312/BY 301.2

RAD 1226/RT 226 Image Production and Evaluation II

1.5 cl hrs, 1.5 lab hrs, 2 cr (spring only)
The course is a continuation of RAD 1126/RT 126 with an emphasis on automatic processing, related mathematics and an in-depth study of factors contributing to radiographic quality. Laboratory experiments includes applied exposure principles using the phantom and film critique.

Prerequisites: RAD 1124/RT 124, RAD 1125/RT 125, RAD 1126/RT 126, RAD 1127/RT 127, RAD 1128/RT 128, BIO 2311/BY 301.1, MAT 1275/IMA 275; *corequisites:* RAD 1225/RT 225, RAD 1227/RT 227, RAD 1228/RT 228, BIO 2312/BY 301.2

RAD 1227/RT 227 Radiographic Pathology

3 cl hrs, 3 cr (spring only)
A study of disease processes of the body systems, related radiographic examinations and related terminology.

Prerequisites: RAD 1124/RT 124, RAD 1125/RT 125, RAD 1126/RT 126, RAD 1127/RT 127, RAD 1128/RT 128, BIO 2311/BY 301.1; *corequisites:* RAD 1225/RT 225, RAD 1226/RT 226, RAD 1228/RT 228, BIO 2312/BY 301.2

RAD 1228/RT 228 Clinical Education I

13 clinic hrs, 2 cr (spring only)
A 30-day internship designed to integrate the didactic and practical concepts learned in the radiologic technology laboratories. Emphasis is placed on patient care, patient positioning, radiation protection and image production. Film critique and case presentation are required.

Prerequisites: RAD 1124/RT 124, RAD 1125/RT 125, RAD 1126/RT 126, RAD 1127/RT 127, RAD 1128/RT 128, BIO 2311/BY 301.1, ENG 1101/EG 101; *corequisites:* RAD 1225/RT 225, RAD 1226/RT 226, RAD 1227/RT 227, BIO 2312/BY 301.2

RAD 1229/RT 229 Clinical Education II

19.5 clinic hrs, 3 cr (summer session)
A continuation of RAD 1228/RT 228 which includes a 35-day internship designed to integrate didactic and clinical concepts. Emphasis is placed

on laboratory experiences learned in RAD 1225/RT 225. Film critique classes are held weekly.

Prerequisites: RAD 1225/RT 225, RAD 1226/RT 226, RAD 1227/RT 227, RAD 1228/RT 228, BIO 2312/BY 301.2

RAD 12325/RT 325 Radiographic Procedures III

1.5 cl hrs, 1.5 lab hrs, 2 cr (fall only) Materials fee \$30
This course is a continuation of RAD 1225/RT 225 with an emphasis on more advanced radiographic positioning and procedures. Practical laboratory experiences include advanced skull and spine procedures.

Prerequisites: RAD 1225/RT 225, RAD 1226/RT 226, RAD 1227/RT 227, RAD 1229/RT 229; *corequisites:* RAD 2326/RT 326, RAD 2327/RT 327, RAD 2328/RT 328

RAD 12326/RT 326 Radiographic Physics

2 cl hrs, 2 cr (fall only)
Instruction in the principles of x-ray generation, x-ray circuits and equipment. Basic concepts of quality management is covered.

Prerequisites: RAD 1225/RT 225, RAD 1226/RT 226, RAD 1227/RT 227, RAD 1229/RT 229; *corequisites:* RAD 2325/RT 325, RAD 2327/RT 327, RAD 2328/RT 328

RAD 12327/RT 327 Cross-Sectional Anatomy

2 cl hrs, 2 cr (fall only)
The course emphasizes cross-sectional anatomy as used in medical imaging with a correlation of anatomical structures and sectional images.

Prerequisites: RAD 1225/RT 225, RAD 1226/RT 226, RAD 1227/RT 227, RAD 1229/RT 229; *corequisites:* RAD 2325/RT 325, RAD 2326/RT 326, RAD 2328/RT 328

RAD 2328/RT 328 Clinical Education III

19.5 clinic hrs, 3 cr (fall only)
A 45-day internship which builds on knowledge and skills attained in previous clinical experiences (RAD 1228/RT 228, RAD 1229/RT 229). Student performance is competency based. *Prerequisites:* RAD 1225/RT 225, RAD 1226/RT 226, RAD 1227/RT 227, RAD 1229/RT 229; *corequisites:* RAD 2325/RT 325, RAD 2326/RT 326, RAD 2327/RT 327

RAD 2425/RT 425 Advanced Radiographic Studies

2 cl hrs, 2 cr (spring only)
Instruction in principles and practice of advanced radiographic procedures and equipment. *Prerequisites:* RAD 2325/RT 325, RAD 2326/RT 326, RT 2327/RT 327, RAD 2328/RT 328; *corequisites:* RAD 2426/RT 426, RAD 2427/RT 427, RAD 2428/RT 428

RAD 2426/RT 426 Imaging Modalities

2 cl hrs, 2 cr (spring only)
A study of various imaging systems, including recent advances in medical imaging. *Prerequisites:* RAD 2325/RT 325, RAD 2326/RT 326, RAD 2327/RT 327, RAD 2328/RT 328; *corequisites:* RAD 2425/RT 425, RAD 2427/RT 427, RAD 2428/RT 428

RAD 2427/RT 427 Seminar

1 cl hr, 3 lab hrs, 2 cr (spring only) Materials fee \$30
A comprehensive summary and review of didactic and clinical skills required for entry into medical imaging. Laboratory exercises in image critique and quality assurance will be covered. *Prerequisites:* RAD 2325/RT 325, RAD 2326/RT 326, RAD 2327/RT 327, RAD 2328/RT 328; *corequisites:* RAD 2425/RT 425, RAD 2426/RT 426, RAD 2428/RT 428

RAD 2428/RT 428 Clinical Education IV

19.5 clinic hrs, 2 cr (spring only)
A 45-day internship which builds on the knowledge and skills attained in previous clinical courses, RAD 1228/RT 228, RAD 1229/RT 229, RAD 2328/RT 328. Student performance is competency based. *Prerequisites:* RAD 2325/RT 325, RAD 2326/RT 326, RAD 2327/RT 327, RAD 2328/RT 328; *corequisites:* RAD 2425/RT 425, RAD 2426/RT 426, RAD 2427/RT 427

RAD 2429/RT 429 Clinical Education V

13 clinic hrs, 2 cr (summer session)
A 24-day internship which builds on the knowledge and skills attained in previous clinical courses, RAD 1228/RT 228, RAD 1229/RT 229, RAD 2328/RT 328, RAD 2428/RT 428. Student performance is competency based. *Prerequisites:* RAD 2425/RT 425, RAD 2426/RT 426, RAD 2427/RT 427, RAD 2428/RT 428